DataAngel

Product Installation ar User Guide

Ref: 11020191Version 1

DataAngel Monitoring Made Easy

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DataAngel

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Delivery Box Content to Include

DataAngel
x 1

Sensors
x No. Ordered

Power
Supply x 1

System Overview

The DataAngel is a wireless stand-alone monitoring system which can be used to monitor temperature, humidity, gas leak detection, electrical energy consumption and fault signals.

Only DataAngel Wireless Sensors & Wireless Repeaters are compatible with a DataAngel Base Station. Each base station can be paired with a maximum of 19 Wireless Sensor and Repeater inputs.

Warning

Please read this manual completely before attempting a system installation.

Ensure all correct safety equipment is used and that the system is fitted by a competent person

DataAngel System Layout

Front View

Figure 1

1. Main Display
2. Up Key
3. Down Key

When pressed together they become the System Menu entry key

4. Enter Key

Rear View

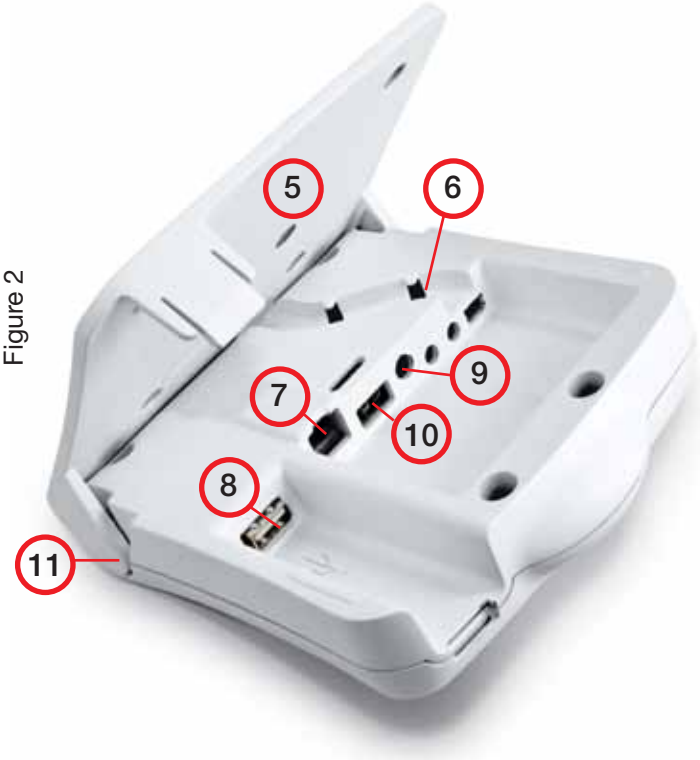


Figure 2

5. Wall Bracket
6. Cable Channel
7. Ethernet Port
8. USB Memory Port
9. Power Socket
10. Volt Free Relay
11. Wall Bracket Fixing Lug

DataAngel System Layout - continued

Display Detail

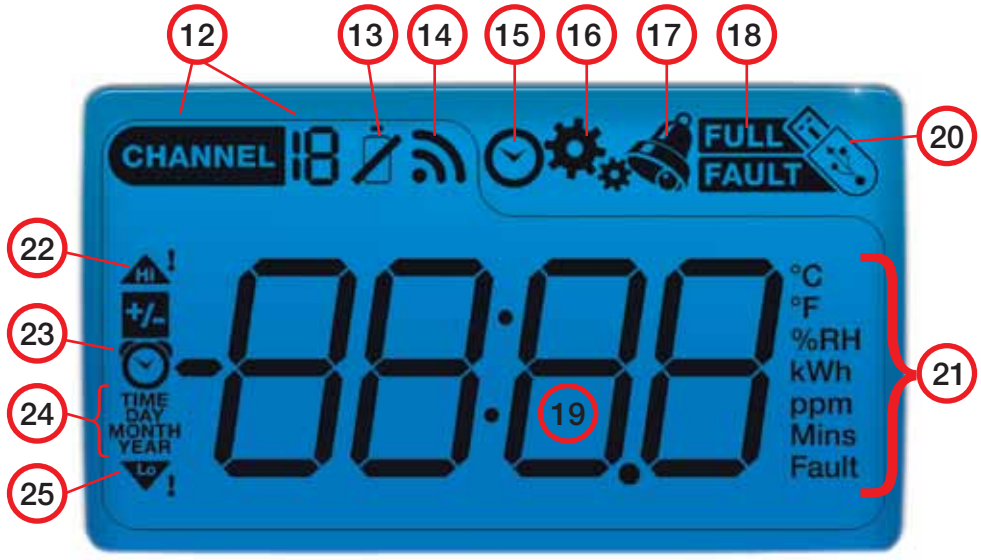


Figure 3

12	Channel Number	19	Sensor Reading Value
13	Battery Low Symbol	20	USB Memory Indicator
14	Wireless Strength Symbol	21	Sensor Type Symbol
15	Clock Setting Symbol	22	High Set Point Indicator
16	System Menu Symbol	23	Alarm Delay Symbol
17	System Alarm Symbol	24	Date Setting Symbols
18	Memory Full/Fault Indicator	25	Low Set Point Indicator

Setting-Up the Base Station

Powering up the Base Station.

Do not plug the power supply into a wall socket until instructed in the following steps.

1. Remove the wall plate from the rear of the unit, this can be done by opening the unit forwards (as per figure 2 on page 3), carefully holding the base station in one hand, grip the wall plate at a lug swivel point (Figure 2, Point 11)with a free hand and gently pull the connecting lug from it snap-in holder.

2. Remove the wiring cover plate to expose the power & Ethernet connection points.

3. Insert the power connector into it's connecting slot (Figure 2, Point 9). This power connector has a twist clip to keep it firmly in place. To insert the twist clip align the fitment points on the power connector to those in the base station, push the power connector fully into the base station and then twist 90 degrees to the left to create a firm connection.

4. Insert the Ethernet connector into it's connection point (Figure 2, Point 7). Ensure the Ethernet connector has correctly fastened and is firmly in place. (For Networked Upgraded Base Stations ONLY)

5. Carefully feed the power and Ethernet cables through the cable channel on the rear of the base station so that they fit snugly in place and refit the wiring plate cover.

6. Plug the power supply into the mains and switch on to power up the base station.

7. On power-up the base station screen light up and show the current preset clock time.

Setting-Up the Base Station - Continued

Entering the System Menu.

Figure 4

To enter the System Menu setting you must press and hold the up and down arrow keys simultaneously for 2 seconds. See Figure 4

A password screen will appear and the Administrator password needs to be entered (the default passcode for a system set up is 5555). To enter the passcode use the up and down keys to select each number in turn, once the number is selected press the enter key to move to the next number, repeat for all 4 numbers, after pressing enter for the 4th number the screen in Figure 4 will be seen.

The System Menu comprises the follow screens – each will be detailed in full within this manual.

Set – Settings Menu where sensor default settings can be amended
End – Returns from the System Menu screens back to the readings screen.
Net - Networked Menu – Enables setting and viewing of the networked settings
PASS – Password menu for assigning users and changing passcodes
Conf – Configuration menu for adding/deleting sensors on selected channels
CLOC – Clock menu for setting the system time & date

As a security feature, if the system detects inactivity within the System Menu for more than 30 seconds the user will be logged out and will need to re-enter the Administrator password to regain access.

When in a sub menu you can return to the System Menu at any time by pressing and holding both the up and down keys as per Figure 4 for 3 seconds.

On entering the System Menu during the initial installation it is essential that the first item that must be checked and set is the correct system time & date.

Warning

Warning once system set up is complete be sure to change the default Administrator password. (See Password for password change instructions).

Setting-Up the Base Station - Continued

Checking & Setting the Time & Date.

Figure 5

Steps

1. Enter the system menu (as per Figure 4 on page 6)

2. Press the up or down keys and select CLOC (see figure 5) from the System Menu and press the enter key.

3. “Time” will show on the left of the display and the hour figure will flash. Select the correct hour using the up and down keys, press enter to confirm the hour and the minute will then flash. Amend the minutes using the up and down keys and once the correct minute time is selected press enter to confirm.

4. “Day” will show on the left of the display and the day number will flash, using the up and down keys select the correct day date and the press enter. Set “Month” and “Year” using the same process. The date format in the system is DD/MM/YY .

5. Once the “Year” is set press enter and the system will then return to the System Menu screens.

Setting-Up the Base Station - Continued

Adding & Pairing DataAngel Sensor to the Base Station

Each sensor must be added and paired to the base station separately, each sensor is paired in the Configuration Menu.

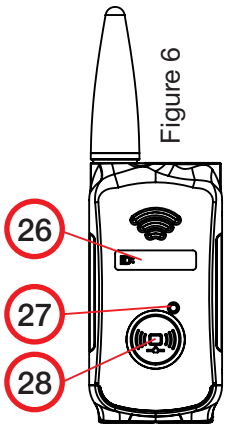


Figure 6

26 ID box

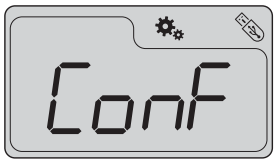
27 L.E.D

28 Transmit Button

Steps

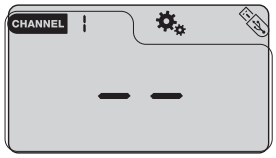
1. Have the Sensors to pair readily at hand

2. Access the System Menu



3. Select “ConF” and press enter

4. The first free channel number will flash at the top of the display (for a first time set up this will be Channel 1). Once a channel number is chosen press enter and continue to step 5.



Another channel number can be selected using the up and down keys. If the channel already has another sensor paired it will display “On” in the display screen. To overwrite this already paired sensor continue to step 5.

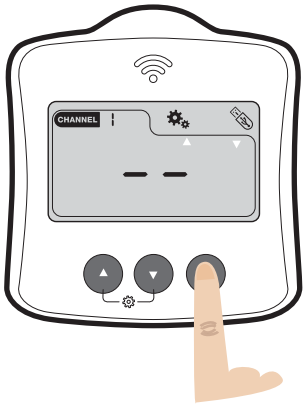
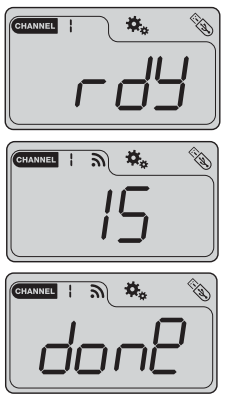


Figure 7

5. Press and hold the enter key for 3 seconds. The display will then show “rdy” – ready and then a 15 second countdown will begin. During the count down time press and hold the “Transmit Button” (See Figure 7) on the sensor being pairing. The pairing is complete when the sensor LED flashes green. Once the green flash is seen release the “Transmit” button and the base station will then confirm pairing by showing “done”. If “fail” is shown then the pairing has not completed correctly and Step 5 needs to repeated. The “done” or “fail” will show on the screen for 5 seconds, after these 5 seconds the screen will return to the “Conf” menu heading.



Setting-Up the Base Station - Continued

Adding & Pairing DataAngel Sensor - Continued

Steps - Cont.

6. Holding the sensor at arms-length from the base station press and release the “Transmit Button”, the LED on the sensor should flash twice confirming communication with the base station.

7. Using an Indelible Marker Pen, write the channel number within the ID Box section on the front of the paired sensor. Be sure to do with straight away so not to be confused as to which sensor relates to which channel (especially when more than 1 sensor is being added to the base station).

8. Put the marked sensor aside and repeat steps 1 to 7 for each of the other sensors to be added.

Once all sensors have been paired correctly marked with their channel numbers the next stage is to amend the alarm set points and delays assigned to each sensor in turn.

Removing a Paired DataAngel Sensor from the Base Station

1. To remove a sensor from the system follow steps 1 to 5 above. At step 5 once the “rdy” is displayed and the 15 second count down commences leave the system to reach zero and the word “FAIL” will appear, the sensor on the channel will then have been removed.

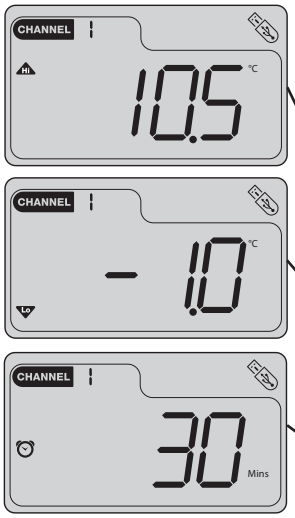
Remember to ensure that the correct sensors are used for the correct applications. Refer to the Sensor datasheets for the correct specifications.

Setting-Up the Base Station - Continued

Reviewing Alarm Set Points & Delays

For non-networked base station set points and alarm delays can only be viewed and amended by following the steps below

For Networked systems they can also be viewed & amended remotely. Refer to Networked System Option Section for further details.



To review current alarm set points for any sensor, choose a channel number on the display by pressing the up and down keys, once the correct channel is selected press the enter key.

The first reading shown will be the high set point.

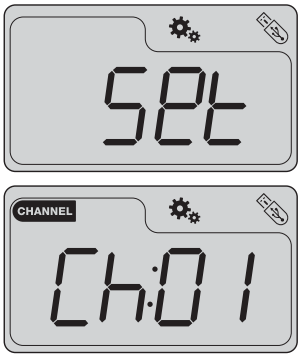
Pressing the enter key again will show the low set point

And a final press will show the current alarm delay.

Changing Alarm Set Points & Delays

Hi, low or alarm delay set points can be changed for any sensor, each sensors set points must be changed separately.

Steps for changing set points



1. Enter the System Menu (Figure 4 on page 6)

2. Select the “set” – Settings Menu and press the enter key. The display will change to allow the selection of the channel to amend, “Ch:01” with the “01” flashing will be displayed. Using the up and down keys select the channel number where changes to the set points and alarm delays are required and press the enter key.

Setting-Up the Base Station - Continued

Changing Alarm Set Points & Delays - Continued

Steps for changing set points - Cont.

Temperature sensors come with default set points of 0 to +10 degrees and a defrost delay of 30 minutes.

3. Lo Will be indicated on the lower left hand element of the display and the current low set point will be flashing, to amend the set point use the up and down keys, by continually pressing the up/down key the set point change rate will increase (the longer the key is pressed the quicker the rate of change occurs). When the desired set point is achieved release the key and the rate of change will stop, the settings can be fine tuned by pressing the up and down keys individually. Once the desire set point is achieved press enter.

4. Hi Will be indicated in the upper left hand element of the display, follow step 3 to amend the high set point then press the enter key.

5. Will appear in the centre of the left hand element of the display, this denotes the alarm delay time. This is the amount of time the system will wait once a set point is exceeded before creating an alarm message with the system. Follow step 3 and press enter once the desired alarm delay is achieved.

Remember when monitoring refrigerated or frozen applications defrost cycles will occur throughout the day, therefore ensure that adequate alarm delay are allowed to stop false alarms taking place.

6. From “set” menu, press enter and select the next sensor where set points need to be amended and complete steps 1-5 for each. Repeat for all sensors paired with the base station.

Setting-Up the Base Station - Continued

Creating Users & Setting Up Alarm Acknowledge

For Networked Upgraded Systems please see the Networked Options section of this manual on how users are created and the password levels given.

With non-networked systems users are only created to be able to acknowledge alarms.

With networked & non-networked systems, users can be set-up too have to enter a passcode to acknowledge system alarms. Acknowledging an alarm creates a record within the base station memory which allows visibility of alarm incidents and gives accountability to staff for actions taken.

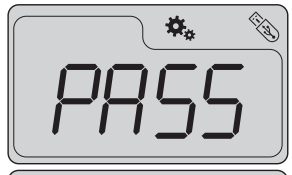
When an alarm event occurs the base station will make an audible noise and the alarm symbol will flash continually. If no passcode acknowledge is created on the base station then any member of staff can acknowledge the alarm by simply pressing the enter button for 3 seconds. The audible alarm will then mute and the alarm symbol will become fixed and stop flashing. A log entry will be created for alarm acknowledged showing a time and date stamp.

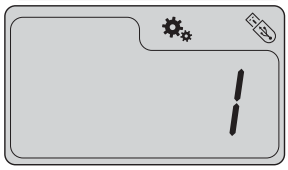
If password acknowledge is created on the base station then any member of staff can press a button to mute the audible alarm for 5 minutes, the flashing alarm symbol will continue. After each 5 minute interval the audible alarm will reactivate, this will continue until the alarm is acknowledged by a recognised user. To acknowledge an alarm the user must hold down the enter key for 3 seconds, the passcode screen will then appear and the user enters their passcode, the system acknowledges this by showing “clr” – Clear - on the display and the audible alarm will be permanently muted and the flashing symbol will become fixed. The user’s password details will be entered into the base station log giving total visibility of who acknowledged the alarm and when.

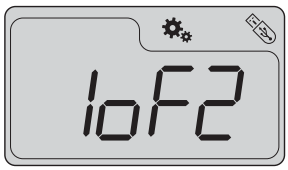
A base station can have a maximum of 5 users to acknowledge alarms, this is 4 plus the Administrator. For passcode acknowledge to be activated the Administrator plus 1 other user need to be created with their own unique 4 digit passcode.

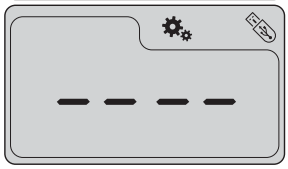
Setting-Up the Base Station - Continued

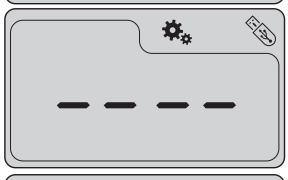
Creating Users & Setting Up Alarm Acknowledge - Continued

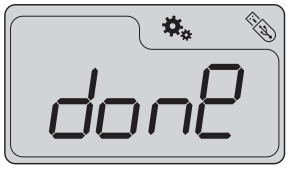












Steps for activating passcode acknowledge

1. Enter System Menu (see Page 6 Figure 4)

2. Select “PASS” – Password Menu Option, the word “USEr” will appear for 3 seconds the then be replaced by “1” to denote first user option. Select a user number and then select enter.

3. “1of2” will display for 2 seconds before the 4 digit input lines appear “- - - -“, by pressing the up and down key a number from 0 to 9 can be entered , press enter to move to the 2nd key setting repeat for all 4 keys, “2of2” will then appear and the passcode needs to be repeated to be acknowledge, if the passcode used is acceptable then “done” will display, if the password is unacceptable and needs to be changed “fail” will display. After 3 seconds the system will return to the “PASS” menu level.

4. Repeat step 3 for all 1-4 users to be added to the system.

5. The Administrator passcode is no. 5 in the user list. To amend the Administrator passcode select “USEr 5” and follow step 3.

Steps for de-activating passcode acknowledge

1. Follow steps 1 to 3 above, for each user 1-4 change the passcode to the default “0000”. Once all 1-4 users are put back to the default setting then password acknowledge will be removed and simply pressing the enter key for 3 seconds will acknowledge an alarm.

Administrator passcode cannot be deleted.

Installing the Base Station & Sensors

Now that the basic set up is complete the Base Station and Wireless Sensors are ready to be installed.

The base station can be unplugged from the mains and transferred to its final installation location. Once set up and plugged back into the mains it will automatically start communication with the sensors that are paired with it. This allows for the system to be initially set up in a convenient area which can be away from the eventual installation point.

Installing the DataAngel Base Station

1. Mount the wall bracket. The base station wall bracket has been designed to be easily secured to the fixing location using 4 screw fixing points. This wall bracket needs to be mounted within reach of a standard mains plug socket point for power, for systems that will be networked it will also need to be within 3 meters of a network connection point.

2. Once the wall bracket is secured the base station is clicked into place by locating the fixing lugs on the bottom of the wall bracket into the fixing channels on the bottom of the sides of the base station. The base station is then eased back into the bracket and will clip into place.

3. Once secured the base station should be firmly attached to the wall bracket, when closed the USB memory should be total invisible form any angle.

4. Power up the base station and install the wireless sensors into the areas to be monitored, when locating each sensor press and release the “transmit” button, this will force a transmission from the sensor to the base station. The LED on the sensor should flash twice.

Installation should be completed by appropriately experienced personnel

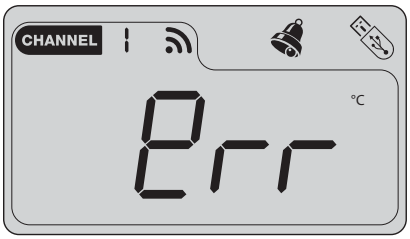
Installing the Base Station & Sensors - Continued

Installing the DataAngel Wireless Sensors

Wireless Sensor are mounted depending on the required application. Wireless Sensors come with a magnetic strip attachment as standard. For non magnetic applications clip brackets for the Wireless sensors and need to be used.

Once all sensors are installed there wireless communication strength will be visible against each channel within the base station display area, the strength of signal is denoted by the Wireless Strength Symbol

Under full communication strength 3 bars will be constantly shown (as above), 1 bar showing shows the lowest level of communication strength and if no communication is possible with the sensor the system will show “err” on the display and the 3 bar symbol will be constantly flashing.



If wireless communication between the base station and a sensor is lost for more than 45 minutes the base station will go into an alarm status. The audible alarm and flashing alarm symbol will begin until acknowledged.

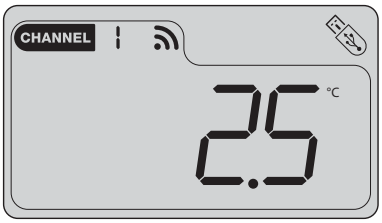
Where signal strength is weak or nonexistent “Repeaters” can be added into the system to boost the transmission strength. Repeaters are mains powered and plugged into a standard mains 3 pin socket

Repeaters are added to the system in the same was as a sensor (Refer to Adding and Pairing a DataAngel Wireless Sensor on page 8). Repeaters use a Channel in the same way as a sensor but during normal use no information is shown on the base station display in respect to the Repeater channel.

Using the DataAngel Day to Day

Now the DataAngel system is installed the monitoring and recording of data will have commenced, below are details of how to view current readings on the display, identify possible pending alarms, system alarms & understand other display symbols

Viewing Current Readings on the Display

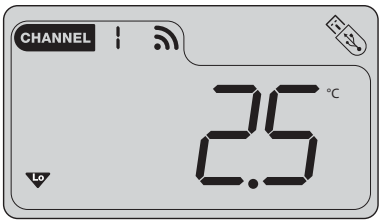


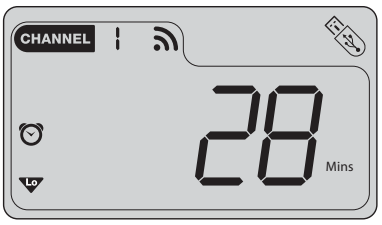
The base station display shows the current readings taken by each sens
Readings are taken by sensors every minute, the base station shows the
and records every 5th reading (5 minute recording interval) to its USB
memory.

The reading for each paired sensor will be rolled by the base station screen every 5 seconds, therefore a constant view of sensor readings can be easily seen. By pressing the up and down keys the channels can also be scrolled through giving the ability to quickly view a reading on any channel seen.

When viewing a channel's the current set points and alarm delays can be seen by pressing the enter k
The low, high and alarm delay will be shown for each enter key press.

Identify Pending Alarms





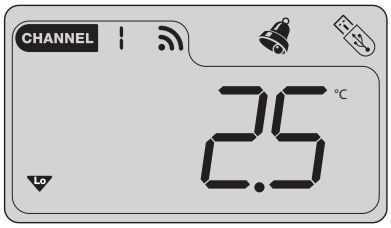
When the base station detects a sensor reading outside of the set parameters it will automatically start the count down for the alarm delay set. On the display the alarm delay indicator will be set and the reason for the alarm (i.e. the reading is above or below the set point) will be flashing when displaying the relevant sensors channel.

The alarm delay outstanding can be viewed by selecting the relevant channel and pressing the enter key, the first reading shown will be the current outstanding delay, pressing the enter key again will scroll through the set points and the total alarm delay set for the sensor.

The example above shows that the sensor on Channel 1 is below it current low set point, when Channe
is selected and enter pressed the outstanding alarm delay of 28 minutes can be seen. ie, if the Channe
reading is not back within its set points within 28 minutes the system will alarm. By taking the outstan
ing alarm delay from the total alarm delay for the Channel the total time the sensor has been outside o
its set points can be calculated. Remember if measuring refrigerated equipment you will expect alarm
delays to show for defrost periods.

Using the DataAngel Day to Day

System Alarms



When an alarm event occurs the base station will automatically make an audible warning noise, the alarm symbol indicator will continually flash and an email alarm alerts can be generated (on Networked Systems ONLY refer to the Networked System Option within the manual).

Alarm events will occur for the following factors

1. A sensor reading is outside of its set points and the alarm delay has concluded
2. A sensor has lost communication with the base station for more than 45 minutes

Once an alarm event occurs the base station automatically writes an entry into its Alarm Log within the memory.

Acknowledging System Alarms

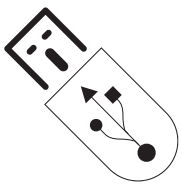
Setting up and acknowledging alarm is covered in detail in Setting-up Users and Acknowledging Alarm Delays on page 12.

Once an alarm has been acknowledged the alarm symbol will become solid and will only been seen against the channel of the sensor where the alarm issue has occurred.

Should a further alarm event occur the alarm sounder will activate and the alarm symbol will flash until this alarm has been acknowledged.

When the alarm event has been acknowledged the base station will update the entry within the Alarm Log with the relevant data.

Other Display Symbols Explained



USB Memory Symbol - when shown on the display the system is indicating that the USB memory is installed, when not shown it indicates that the USB memory has been removed.

Remember you can the base station will record data for up to 15 days with the USB memory Removed.

USB Memory Write Symbol- when the base station is writing to the USB memory the Write Symbol will be flashing. The USB memory should not be removed form the base station when the Write Symbol is flashing.

Using the DataAngel Day to Day

Other Display Symbols Explained - Continued

Memory Full Symbol - this indicates one of the following,

1. If the USB Memory Symbol is display then the USB memory is full and should be replaced.

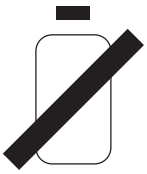
2. If the USB Memory Symbol is not displayed then the base station memory is full and the USB Mem needs to be re-inserted so that data can be recorded to it.

Memory Fault Symbol - this indicates that the base station detects a fault and cannot write to the USB Memory.

1. Remove and re-install the USB memory stick to see if the fault display disappears

2. Reboot the base station by switching the power off for 15 seconds.

3. If still displayed then replace the USB memory with a new DataAngel USB configured memory stick.



Sensor Battery Life Indicator - When the system detects that a sensors battery power is running low this symbol will appear next to the Channel for that particular sensor.

Once this symbol is displayed then the sensor battery needs to be replaced. See Changi a Sensor Battery on page ??

For NON NETWORKED BASE STATIONS ONLY

If you system has a networked upgrade then please go to the Net worked Options Section of this guide. The following USB chapters are not relevant to you.

DataAngel has been designed to be able to operate as a completely stand alone monitoring and recording system. All data is stored to the systems internal USB memory, the instructions on how to access and view this data are described in the follow pages.

For accessing data in a graphical format the DataAngels bespoke graphing software needs to be downloaded to a PC/Laptop.

Other reports area available in standard HTML and/or CSV formats. HTML will open using the PC/Laptop's default Internet Browser software, CSV can be viewed and used within a number of common software packages.

The base station will continue to record data for up to 15 days with the USB memory removed. Once the USB memory is returned to the base station it will update it with the outstanding days readings.

Data is written from the base station to the USB at midnight each day, therefore only historical data is available (from the previous day backwards) when viewing.

Only Networked Upgraded Base Stations offer the capability of viewing data stored and recorded within the same day.

Removing and Re-installing the USB Memory

The base station is designed to rotate forwards from the wall bracket to give access to internal USB memory.

To open the base station forwards, gently lift the restraining clip on the top left hand corner of the unit and lower forwards.

The USB memory will now be visible and accessible, reinstalling the memory stick is a reverse of the above process.

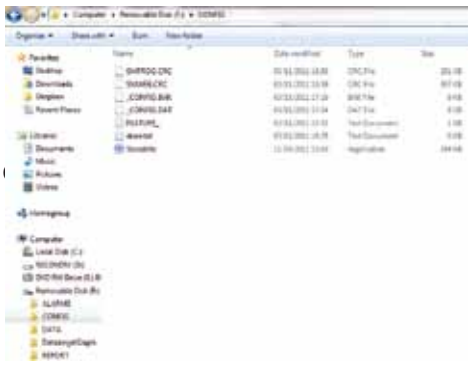
USB Section

Naming Sensors on Channels For Graphs & Reports

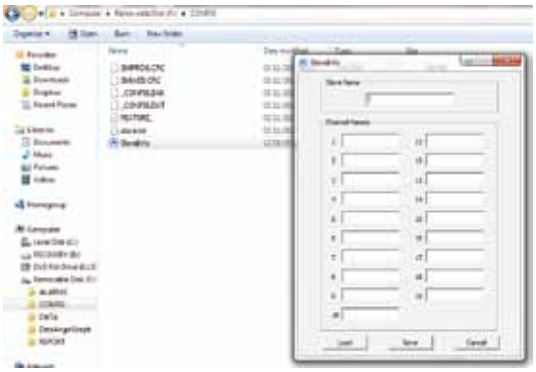
DataAngel Graphs and Reports can have User defined names for sensors instead of their channel number showing.

The following steps show how to add user defined names to sensors

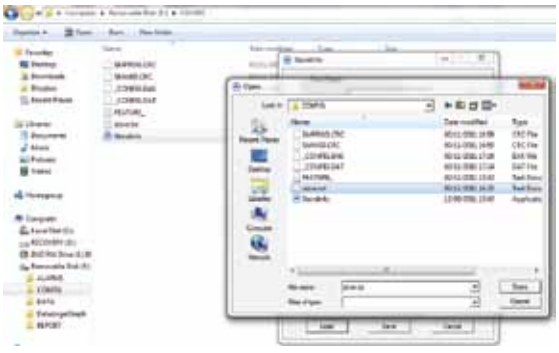
1. Remove USB Memory Stick and insert in USB slot on PC/Laptop, if auto run activates click open folder to view files, if auto run does not start then open relevant USB drive via “My Computer” in Windows Start.

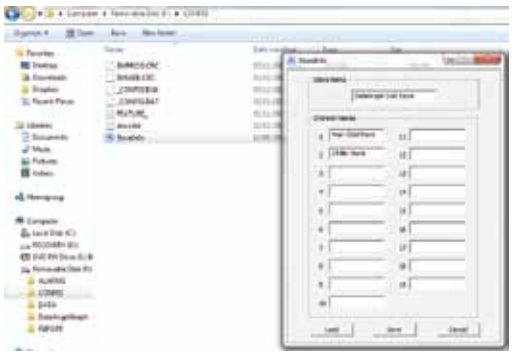


2. Open the “CONFIG” folder on the USB memory double click “StoreInfo” Application. Click allow if requested by computer.



3. In the “StoreInfo” application allows for a business name to b added to the DataAngel reports & graphs as well as entering nam for each sensor on all channels. Click on the load button and a l tion window will open.





5. In the “StoreInfo” application will then reappear, enter the required business name and the sensor names for each of the channels (maximum 15 letters) and then press the save button. Save as store.text file (overwrite current). Re-insert USB memory into base station, reports and graph names will be updated.

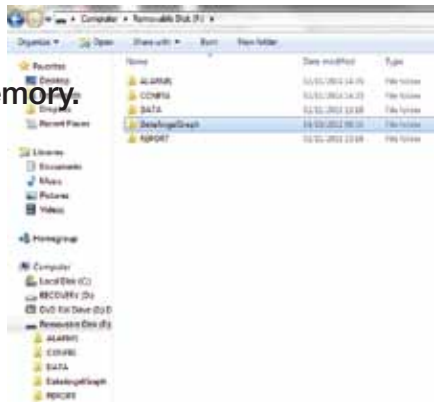
USB Section

Installing Graphing Software onto a PC/Laptop

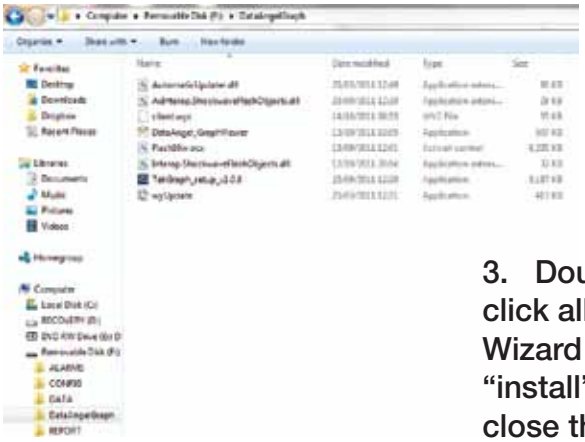
This software can be installed on multiple PC/Laptop's and is license free.

Removable Disk (F:)
General options
Open folder to view files
Use this drive for backup
Speed up my system
View more AutoPlay options in Control Panel

1. Remove USB Memory Stick and insert in USB slot on PC/Laptop, if auto run activates click open folder to view files, if auto run does not start then open relevant USB drive via “My Computer” in Windows Start.



2. Locate and open the “DataAngelGraph” folder on the USB memory.



3. Double click on the “TekGraph_Setup_v1.0.6” application, click allow if prompted by widows. Within the Installation Wizard click “next” when prompted. When prompted click the “install” button. When installation is complete click finish to close the installation window

4. A short cut Icon will have been placed on the desktop, to open the application simply double click on the DataAngel Graphing Icon. Functionality of the software will be covered later in this section.

5. Remember to remove the USB memory and re-insert into the DataAngel base station.

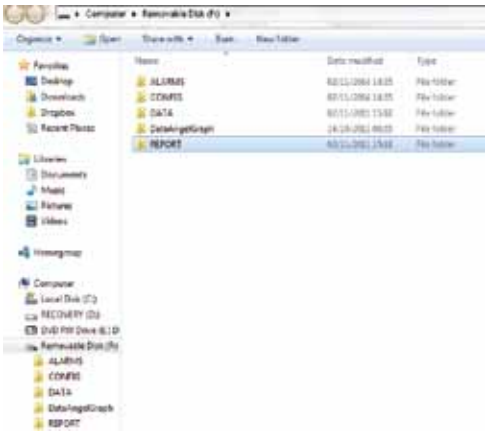
USB Section

Viewing and Saving Reports

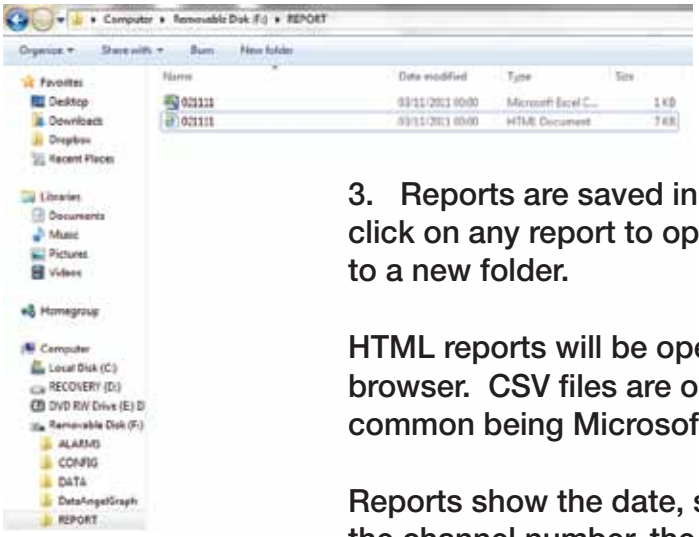
Reports are automatically created by the DataAngel at midnight each day and saved to internal USB memory, these reports are created in HTLM and CSV formats and saved by date.

To retrieve, review, save and print reports follow the steps below.

1. Remove USB Memory Stick and insert in USB slot on PC/Laptop, if auto run activates click open folder to view files, if auto run does not start then open relevant USB drive via “My Computer” in Windows Start.



2. Locate and open the “REPORT” folder on the USB memory. Double click to open.



3. Reports are saved in date order in a dd/mm/yy format. Double click on any report to open, or right click and copy to copy and paste to a new folder.

HTML reports will be opened with the computers default internet browser. CSV files are opened by various packages, the most common being Microsoft Excel.

Reports show the date, system name, sensors names (if updated), the channel number, the high/low set points and then temperature readings at 30 minute intervals for the whole of the day (see Figure 8 below).

Figure 8 Example HTML Report

USB Section

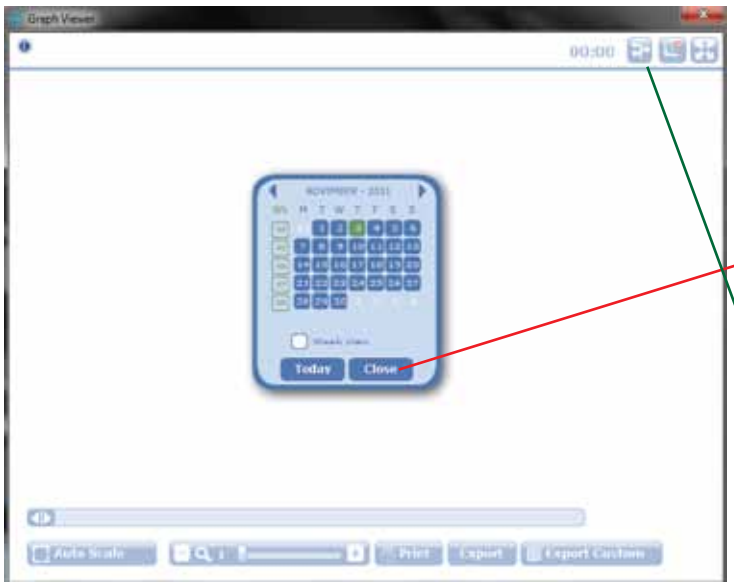
Viewing Data in a Graphical Format

The DataAngel graphing software allows you to view and compare data in an easy to us
format. The graphing software also allow for extended range CSV format data downloa

The installed graphing software will automatically search for updates when launched, should updates be downloaded the software will notify of any action needed.

The steps below go through the process of using the graphing software.

1. Remove USB Memory Stick and insert in USB slot o PC/Laptop. Double click on the DataAngel Graphing software Icon on the desktop.



2. The graphing software will open, the first actions to complete are;

A) Press the Close Button

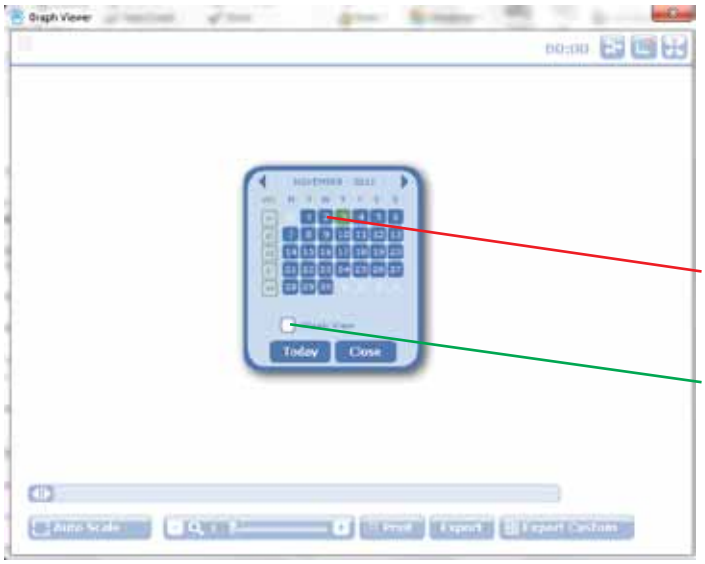
B) Press the Change Connection Button. When the Change Connection Button is pressed a file path both will open.

3. Press browse and locate the path to the Data-Angel USB memory stick, select the “DATA” folder and then press OK.

Once the path file is pointed to the DATA files on the USB click the Set button. The graphing soft-ware is not set to read the historic data stored on the DataAngel USB memory

USB Section

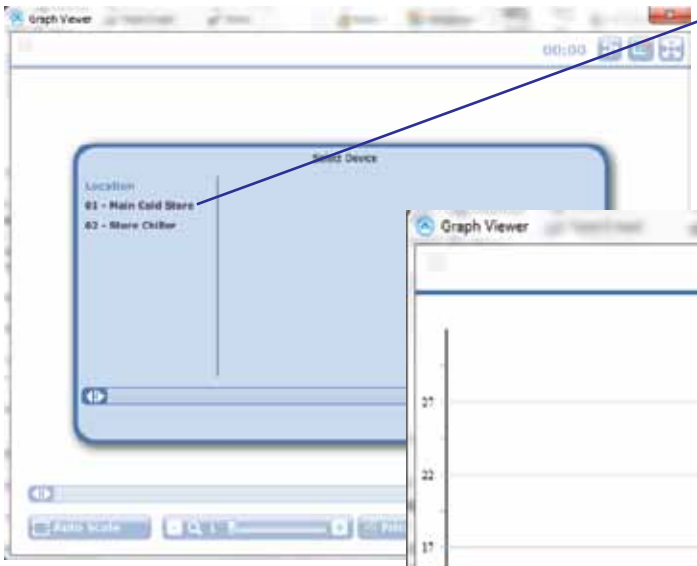
Viewing Data in a Graphical Format - Continued



4. Selected the date from which data is to be reviewed. The whole stored memory is available to choose from.

Single date, select one day with the cursor and click on it to proceed to the next stage.

Week view, select any 7 day snake by ticking the week view box and then moving the cursor over the days then click make a selection.



5. Select the sensor for which data is to be reviewed by clicking on it with the cursor.

Once a selection is made a graph opens with data for the full time period viewed.

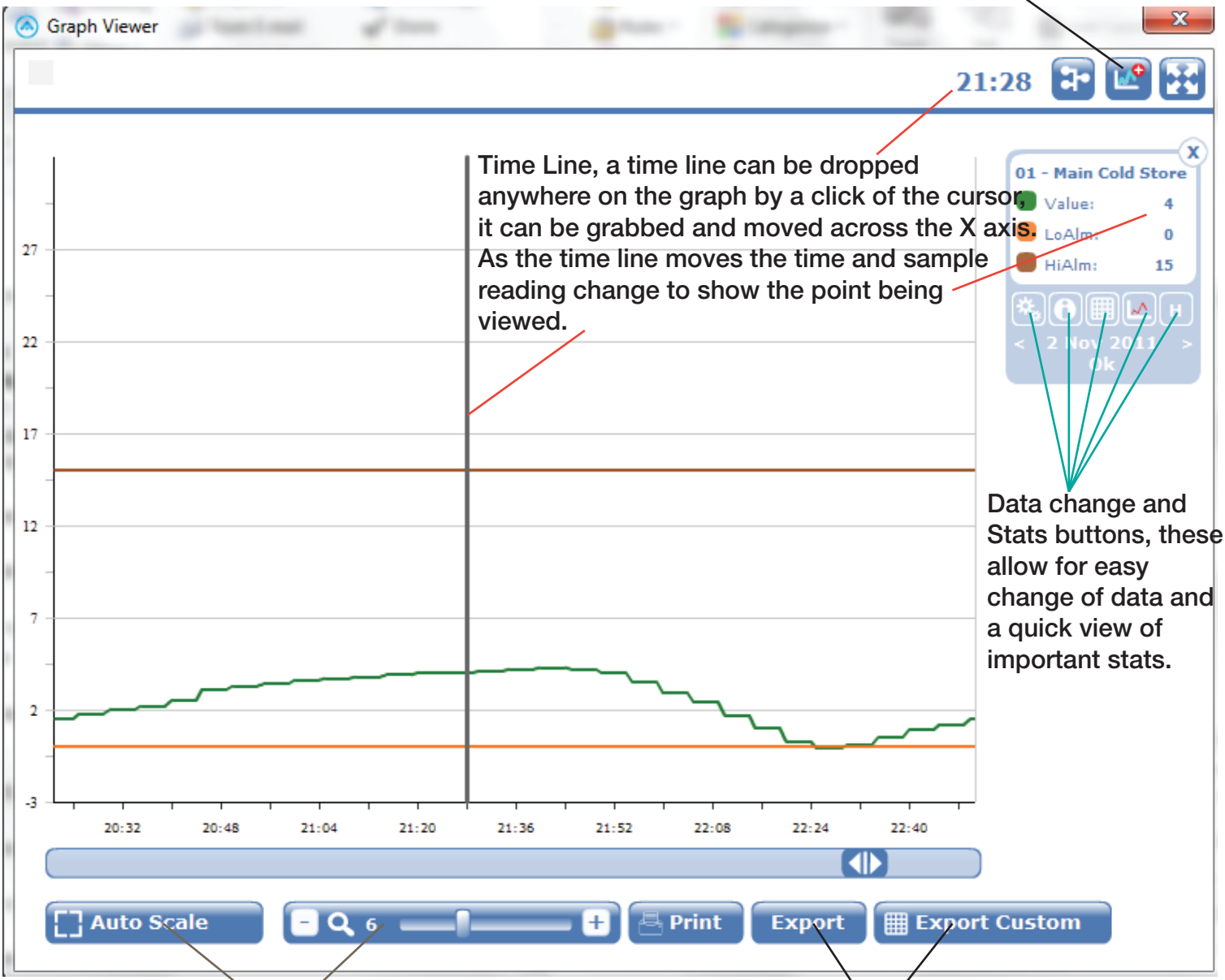
The user has the ability to then perform further actions on this graphical data to investigate and view further.

USB Section

Viewing Data in a Graphical Format - Continued

Graphical View Explained

Comparison Button, allows a selection of other sensors or dates for a comparison of readings to ta place.



Time Line, a time line can be dropped anywhere on the graph by a click of the cursor, it can be grabbed and moved across the X axis. As the time line moves the time and sample reading change to show the point being viewed.

Data change and Stats buttons, these allow for easy change of data and a quick view of important stats.

Auto Scale and Sliding Scale buttons. Sliding Scale allows users to view data down to the 5 minute stored interval.

Export simply gives a CSV export of the data selected within the graph. Export Customer lets the user select the date range for the sensors selected within the graph, use full for long date range data exports.

USB Section

Viewing Data in a Graphical Format - Continued

Using the Comparison Button

1. Pressing the Comparison Button opens a new date window for the comparison date to be chosen, if in single date mode one day can be clicked, if in week mode 7 days can be selected.

2. Once the date is selected the sensor to be com pared is chosen, this can be the same sensor or any other sensor on the system

3. One the sensor is selected the user can then choose the level of detail from the sensor required.

4. The user can also amend the colour of the trace to make it easier to follow on the final graph, this is achieved by clicking on the colour block to bring up the colour choice patter.

5. Once the choices are made the com parison graph is drawn, the user has the same change and view parameter as a single graph. The time line shows the time and data for each of the compared data ranges.

To close a comparison graph the user simply needs to click on the cross within the comparison data table.

USB Section

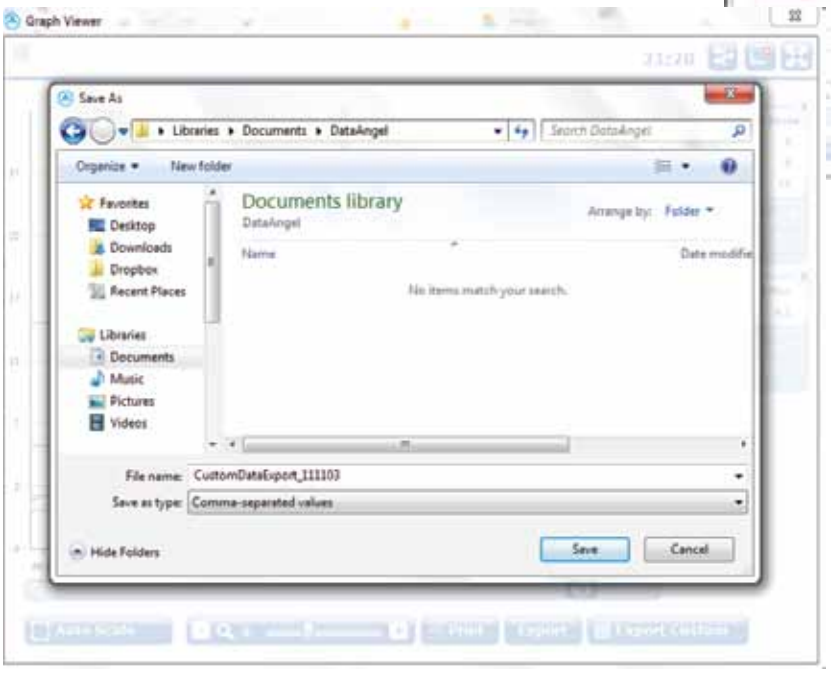
Viewing Data in a Graphical Format - Continued

Using the Export Customer Button

1. The sensor for which extended data is required is selected using the normally graphing function, for multiple sensors then the choice is made using the comparison button previously outlined. Once the selection is made and the graph drawn the Custom Export button is pressed.

2. A date range box will then open in which the user selects the appropriate date range required. The date range can be the full history of the system memory.

3. The system accesses the data and sorts it into the file format, for large date ranges with multiple sensors this can take a some time.



4. Once the download is complete an automatic save box will open, the user needs to choose a location and relevant file name to save the data to.

5. On completion of the file save the data is available to be reviewed/manipulated.

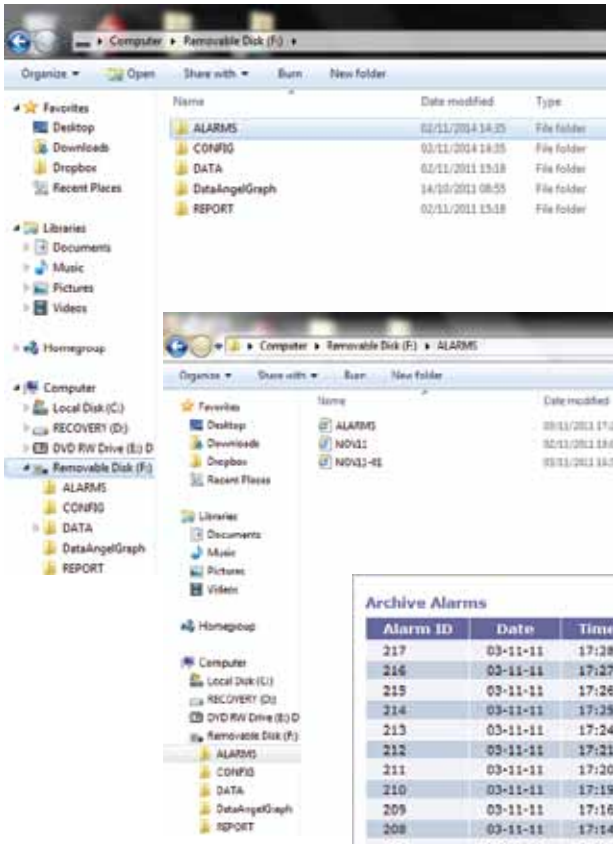
Data from Customer Export is always written to a CSV file format.

USB Section

Viewing Event & Alarm Logs

All alarms and events are recorded by the system into its USB memory. Each alarm/ev
given its own ID and the date, time, Device and other relevant data are recorded.

The steps to access and review alarm & event data are



1. Remove USB Memory Stick and insert in USB slot on PC/Laptop, if auto run activates click open folder to view files, if auto run does not start then open relevant USB drive via “My Computer” in Windows Start. Double click the “ALARMS” folder to enter

2. Select the relevant alarm folder from the list and double click to open.

ALARMS is the last 100 alarms and events.

Other folders are alarms by month archived at 50 events per report. Therefore a month with 300 events would have 6 reports relating to it.

Archive Alarms

Alarm ID	Date	Time	Device	Alarm/Event	By	Acknowledged At	Cleared At
217	03-11-11	17:28	System	Reset			
216	03-11-11	17:27	System	Reset			
215	03-11-11	17:26	email	Setting Changed	admin		
214	03-11-11	17:25	email 1	Setting Changed	admin		
213	03-11-11	17:24	email	Setting Changed	admin		
212	03-11-11	17:21	Web	User Login	admin		
211	03-11-11	17:20	System	Reset			
210	03-11-11	17:19	System	Reset			
209	03-11-11	17:16	email	Setting Changed	admin		
208	03-11-11	17:14	email	Setting Changed	admin		
207	03-11-11	17:13	email	Setting Changed	admin		
206	03-11-11	17:10	Web	User Login	admin		
205	03-11-11	17:06	System	Reset			
204	03-11-11	17:05	System	Reset			
203	03-11-11	17:05	System	Reset			
202	03-11-11	17:04	System	Reset			
201	03-11-11	17:02	System	Reset			
200	03-11-11	16:58	System	Software Update	Program Update		
199	03-11-11	16:46	System	Reset			
198	03-11-11	16:46	System	Reset			
197	03-11-11	16:46	Web	User Login	admin		
196	03-11-11	16:45	System	Reset			
195	03-11-11	16:45	System	Reset			
194	03-11-11	16:44	System	Reset			
193	03-11-11	16:43	System	Reset			
192	03-11-11	16:42	System	Reset			
191	03-11-11	16:41	System	Reset			
190	03-11-11	13:55	System	Setting Changed	admin		
189	03-11-11	11:24	System	Reset			
188	03-11-11	11:24	System	Reset			
187	03-11-11	11:23	System	Reset			

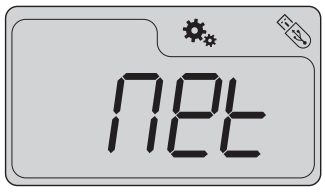
An alarm/event report showing the data that can be viewed in each stored report.

Networked System Option

This section is ONLY relevant to base station systems that have the Networked Upgrad Option installed.

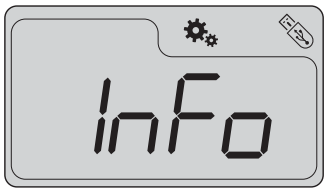
Contact the suppling retailer for details on how to upgrade a base station from a non networked system to a networked system.

net - Networked System Status

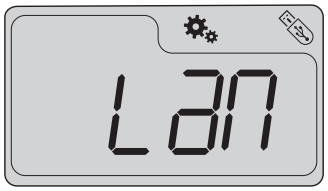


Enter the “System Menu” on the base station and then use the up/down key and select the “net” menu, press the enter key.

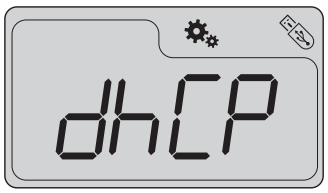
On a non-networked base station the display will show “none” as this functi ality is not available.



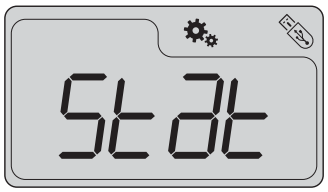
Selecting “Info” shows the current system network set up (system default), also show the current IP address set in the base station.



DHCP client mode, used for connecting directly to a local area connection broadband modem running a DHCP server.



DHCP is used for connecting the system directly to a laptop or computer. the computer or laptop connected will be able to view and access data.



Stat is used for setting the base station with a Static IP address.

Networked Activated Systems are despatched with a default networked connection of “Lan” meaning can be directly connected and viewed on a local network or broadband connection operating with DH client mode. A vast majority of local networks and broadband routers have this mode so no further ac usual needs to be taken.

Networked System Option

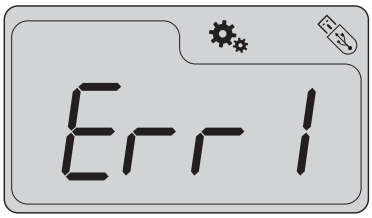
Viewing Systems Networked Status “Info”

The systems networked status can be viewed in the following way.

1. Enter System Menu

2. Enter “net” menu and select “Info”, the network connection type will be displayed for 2 seconc i.e. “Lan” then the IP address assigned will be shown in blocks, based on an ip address being assign blocked packages, please note that the gap between each block displayed will be represented by a f stop in the written IP address, e.g 192.168.0.114 would be seen as 192 then 168 then 0 then 114 on th base station screen.

3. Once shown the display returns to the “net” menu level.



When viewing system “Info”, Err1 indicates that no network connection ca be detected by the base station. Check that the either net connection is correctly made at both the base station and the ethernet connection point (Network point or broadband modem).

Default Lan Connection

To test for connection for this mode then directly connect the base station systems Ethernet cable into a network point or broadband modem.

From any PC or laptop logged onto that network type “myangel” into any standard internet browser IP address window. If the connection is successful the log screen of the DataAngel will appear. If the browser fails to find the DataAngel then follow the instructions for viewing the systems networked status above, note the IP address assigned by the network to the DataAngel and input this IP address directly into the internet browser address window.

DHCP Mode

In DHCP mode only a PC/laptop directly connected to the base station will have access to the on-bo data. To access the system from other PC’s or Laptop's it will need network connected in either Lan Static IP modes.

DHCP mode is ideal when initial completing a system set up, once set up is complete then the defau Lan or Static IP modes should be selected via the “net” menu.

Networked System Option

DHCP Mode - Continued

1. Enter System Menu

2. Enter “net” menu and select “dhcp”, the display will then show “save” and the base station will reboot in DHCP mode.

3. Directly connect the systems Ethernet cable into a PC/Laptop, open an internet browser (the PC/Laptop does not need to be online to access the base station) and type the IP address 192.168.1.1 into the browser address window.

4. The base station log in screen will open in the browser window.

Static IP Mode

To enter a static IP address the base station would first need to be connected to a PC/Laptop or network using either the DHCP or Lan connection modes above.

Once connected the network connection details can be amended and a static IP address set for the system. For information on setting a static IP address follow the instructions in on page.

Note - When a new networked selection mode is made the base station will always display “save” and the system will then reboot. Once the system has rebooted it will be operating in the chosen mode.

All changes made are recorded in the systems Event Log.

As a security feature, once logged in, the base station will review that the user has remained active, if it detects that the user has not been active on the system it will downgrade the users log in level. Therefore if you log in as the administrator and forget to log out the base station will automatically downgrade the log in level to that of Guest after 5 minutes. At Guest level no modifications can be made to systems settings, if changes need to be made then the administrator will need to click on the login button at the top of the web page and re-enter their user name and password details.

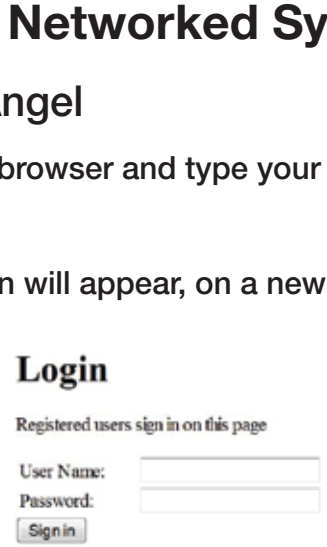
Networked System Option

Logging into A DataAngel

Open any standard internet browser and type your DataAngels set IP address into the browser addres window.

The DataAngels log in screen will appear, on a new unit the default Administrator login details are

User Name: admin
Password: admin1

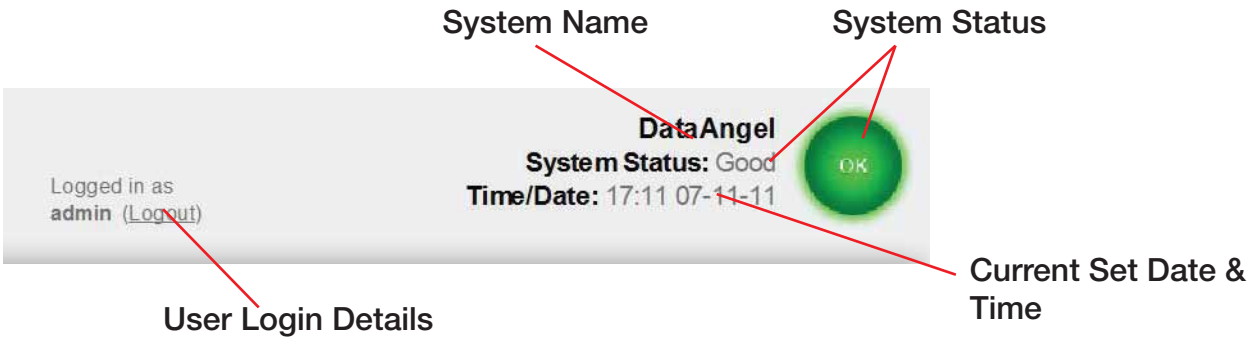


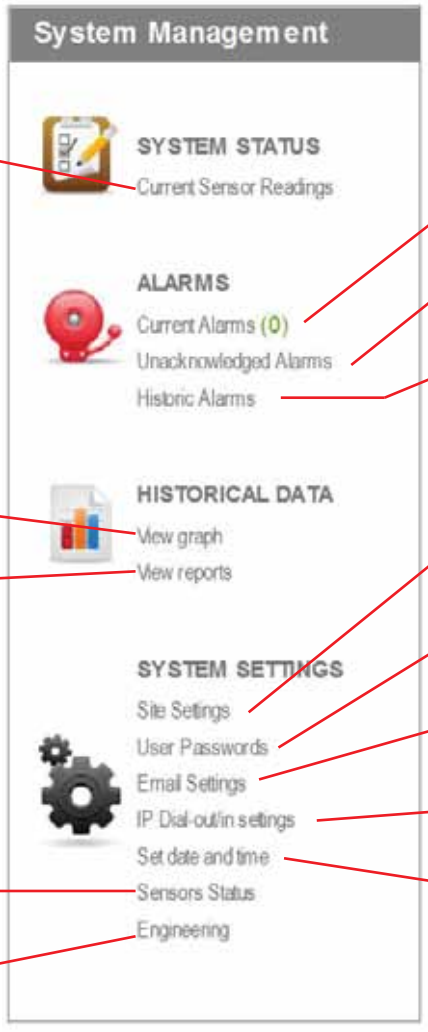
The Current Sensor Readings screen is the default page when logged in, all current sensors that are paired with the base station have their readings appear on this page. The set up for nearly all screens on the DataAngel is the same, they have the System Management bar fixed on the left hand side of the page with the details and change/amend functions then displayed on the right-hand side.

The only variance to this are the Historical Data elements, the graphing uses the full screen and reports are opened into new windows.

Networked System Option

DataAngel Main Screen Explained





Default login screen showing all current sensor readings and set points/Alarm delay details

Shows no. of current alarms

Shows if an alarm has occurred and has not been acknowledged

Alarm and Event Log for the system, showing all alarms and recorded events

Graphical data viewer

HTML & CSV report production tool

The details relating to the site of installation

Tool for creating users and assigning access rights

Tool for setting up email configuration

Tool for setting IP connection protocols

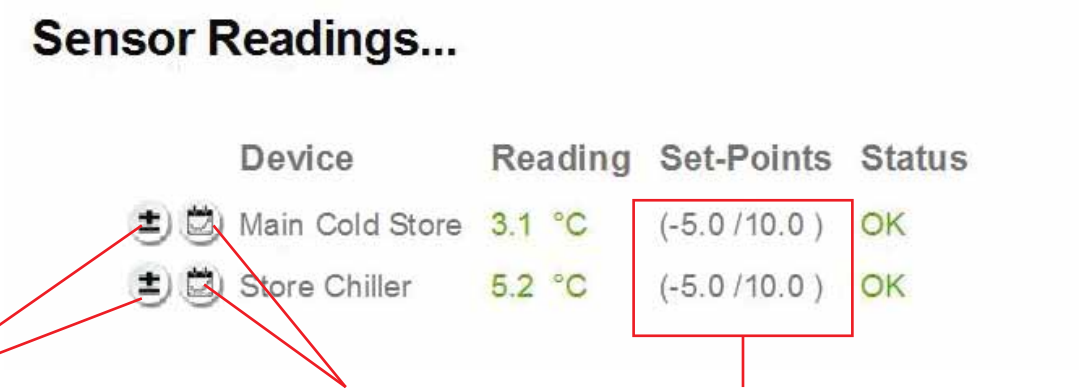
Tool for changing sensor names and apply calibration offsets if required

Date and Time settings window

System specification details

Networked System Option

DataAngel Main Screen Explained - Continued



Sensor set point edit keys

Sensor Direct Graphing Tool

Low & High set points by sensor

Changing Sensor Set Points and Alarm Delays.

1. Click on the sensor set point edit key

2. Click the edit button

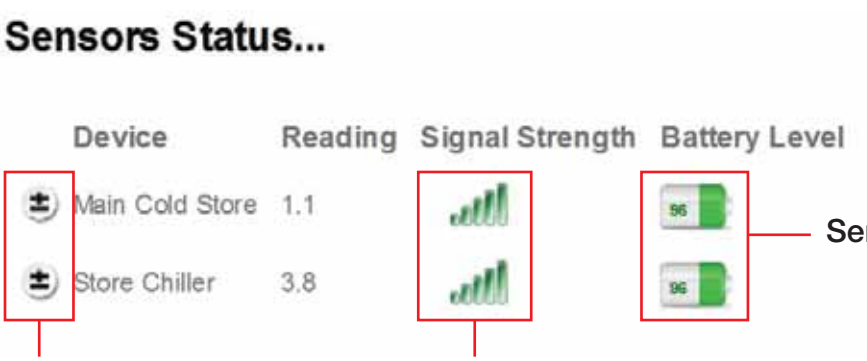
3. Enter the low, high and alarm delay required for the sensor and click submit.

4. Click the “Current Sensor Readings” tab under System Management, select the next sensor and complete steps 1-4 above for all sensors.

Networked System Option

Changing a Sensors Displayed Name

1. Click on the User Passwords tab in Systems Setting



Sensor Battery Usage Indicator

Sensor name edit key

Wireless Signal Strength indicator for each paired sensor

2. The above Sensor Status bar will appear showing all paired sensors

3. Click the edit button to enter the screen so amend the sensor name

3. Enter the sensors chosen name and click submit.

Re-click the Sensor Status tab in System Setti and complete steps 1-3 for all paired sensors.

Note - Calibration offsets can be entered into the base station for each paired sensors, this should only be done by a competent person and where an accurate calibration methodology has been used.

Networked System Option

Setting Users, Passwords & Access Rights

1. Click on the User Passwords tab in Systems Setting

2. In the User Privileges box click on edit so that amendments can be made

3. Enter unique user names and passwords for each of the 4 other user on the system. Passwor must be 5 digits long. Creating a guest login allo multiple users the facility to view data but may nc system amendments

4. User and now created and will have access to the system.

User Level Explained

View only - can only see readings, graphs and reports

Alarm Acknowledge - Same rights as View but can also acknowledge alarms

Settings - Same rights as Acknowledge but can also amend system set points

Full system access and ability to change all system settings

Note - for users to acknowledge alarms directly on the base station then they will also need to be created as per Page 12 Creating Users & Setting Up Alarm Acknowledge

Networked System Option

Setting Up Email Alarm Alerts and Email Reports

1. Click on the Email Settings tab in Systems Setting

2. Click on the edit button to open the edit box so amendments can be made

3. Enter the emails address for reports or alarms to be se
click which type of email should be received

Enter the email providers smtp domain name & server por
number - the provider or IT depart should be able to easil
provide these

Create an address from where the email is from, if authent
tion is required then tick the box and enter the relevant us
name and password. Press submit

4. Initialising DNS will appear as the DATAangel search-
ers for the relevant IP address

Refresh the screen by re-clicking on the Email Settings
tab in Systems Settings

Email details should now be complete

Click test email and confirm that it has been received by
recipients. Daily reports will now be sent at 00.01 and
alarm notifications to those email addresses specified

Networked System Option

System Alarms, Online Acknowledgement & Alarm Information

When a sensor is outside of its set point range it will indicate on the login screen the stages of the alarm process, in the captions below the System Status has changed to alarm pending and then on Alarm. When in the pending mode the alarm delay remaining is clearly shown besides the relevant sensor reading.

Logged in as GUEST Login
DataAngel
System Status: Alarm Pending
Time/Date: 20:08 07-11-11
Sensor Readings...
Device Reading Set-Points Status
Main Cold Store 1.7 °C (-5.0 /10.0) OK
Store Chiller 23.3 °C (-5.0 /10.0) Pending 4m

Logged in as GUEST Login
DataAngel
System Status: ALARM
Time/Date: 20:12 07-11-11
ALARM
Sensor Readings...
Device Reading Set-Points Status
Main Cold Store 1.7 °C (-5.0 /10.0) OK
Store Chiller 20.4 °C (-5.0 /10.0) ALARM

Online Alarm Acknowledgment

1. A user with alarm acknowledge capabilities logs in via the login page

2. The Unacknowledged Alarm tab is clicked under Alarms in the System Management menu to open the alarm dialogue box, the Acknowledge Alarm button is clicked. The audible alarm at the base station will stop and an alarm event will be entered into the system memory.

These buttons on the dialogue box allow the user to instantly view the alarm details. The first button is the Information button, pressing this opens the dialogue box to the right.

The second button is the graphing function, by pressing this the system will display a graphical representation of the data leading up to the alarm event.

Networked System Option

Historic Alarm and System Events

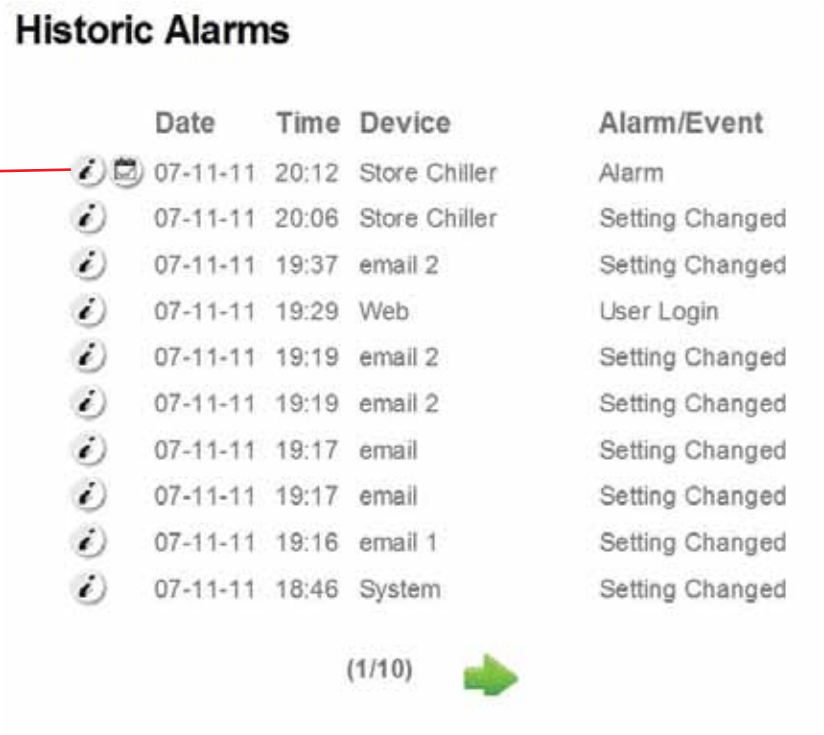
Historic system alarms and events are stored within the “Historic Alarms” tab within the Alarms element of the System Management menu.

These logs can be quickly and easily viewed.

1. Click on the Historic Alarms tab found under Alarms

2. The last 100 Historic Alarm and Event Log will open, all records are stored in date order, older records can be accessed by clicking on the green arrow at the bottom of the log list. Older logs are stored within the USB memory and can be accessed by following the process on page 11, Viewing Event & Alarm Logs

More Information buttons, clicking on these will open the event/alarm dialogue box and give more detail of the stored record


Historic Alarms
Date Time Device Alarm/Event
07-11-11 20:12 Store Chiller Alarm
07-11-11 20:06 Store Chiller Setting Changed
07-11-11 19:37 email 2 Setting Changed
07-11-11 19:29 Web User Login
07-11-11 19:19 email 2 Setting Changed
07-11-11 19:19 email 2 Setting Changed
07-11-11 19:17 email Setting Changed
07-11-11 19:17 email Setting Changed
07-11-11 19:16 email 1 Setting Changed
07-11-11 18:46 System Setting Changed
(1/10)

Networked System Option

Reviewing Historical Data

Historic Data Graphing Tool

Access to the graphing tool can be reached in 2 ways on a networked DataAngel,

The first is via the “Current Sensor Readings” screen using the Sensor Direct Graphing Tool Icon. Pressing this Icon will open the graphing tool for the sensor chosen and ask for a date to be chosen.

The second access method is by clicking on the “View Graph” tab under the Historical Data Tab.

The functionality of the networked graphing is broadly similar to that of the non-networked system, to learn more on how to use the graphing tool refer to the instructions within pages 24 to 26, Viewing Data in a Graphical Format.

Exporting Custom Data

DataAngel offers the user the ability to be able to export data into CSV format for the memories full recorded length.

This functionality is only available via the PC/Laptop graphing function. To be able to output extended date ranges into a CSV format the instructions on pages 23 to 27 will need to be followed.

Historic Data Reporting Tool

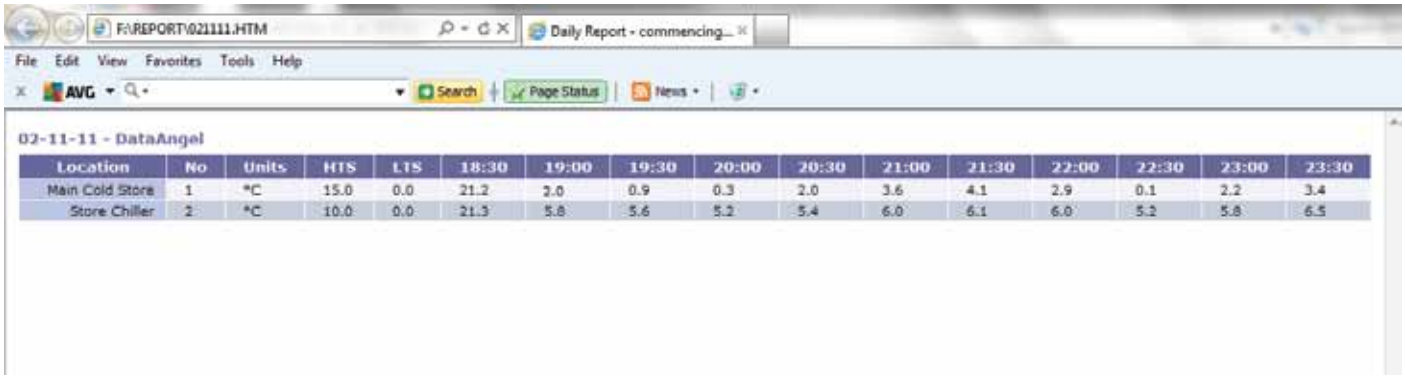
By clicking on the “View Reports” button under Historic Data, the daily report generating tool is activated.

Select the required date range and output format (CSV or HTML) and the system will generate a report for the date requested.

This daily report can be automatically generated and emailed each day automatically by the syste if this is an item that is required daily then the easiest way to receive the document is to set up rep emails. Refer to Setting-up Email Alarm Alerts & Email Reports earlier in this section.

Networked System Option

Historic Data Reporting Tool - Continued



Location	No	Units	HTS	LTS	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30
Main Cold Store	1	°C	15.0	0.0	21.2	2.0	0.9	0.3	2.0	3.6	4.1	2.9	0.1	2.2	3.4
Store Chiller	2	°C	10.0	0.0	21.3	5.8	5.6	5.2	5.4	6.0	6.1	6.0	5.2	5.8	6.5

Reports show the date, system name, sensors names (if updated), the channel number, the high/low set points and then readings at 30 minute intervals for the whole of the day (see the example HTML report above).

Reports can be printed or saved and generated again from the system memory at any time.

Note - HTML reports will be opened with the computers default internet browser. CSV files are opened by various packages, the most common being Microsoft Excel.

Networked System Option

Other System Settings Options

Site Settings

Within Site Settings the user has the ability to change the site name to that of the business & set the network settings for the base station.

1. Click on the Site Settings under System Settings

2. Click on the edit button and the edit-able dialogue box will open.

Within the edit-able dialogue box the user can amend the Site Name and change the Network Mode of the Base Station.

If the system has been set up in DHCP mode then ether Static IP or Lan modes can be chosen.

For a vast majority of users Lan (the default setting) will be the network mode used.

Once the relevant changes are made press submit to save the amendments on the base station.

3. If the network mode has been changed press the reboot button to reboot the base station.

IP Dial Out/In Settings

This function is used mainly by business with external monitoring being carried out by a 3rd party. T allows the 3rd party access to data from the base station and for alarm communication.

Engineering

This page contains all the system data stored in one place. It can also be used to update software software update be purchased in the future.

Monitoring Made Easy